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i2 SUMMIT

LEFT ATRIAL STASIS AND VWF-ADAMTS 13 SYSTEM IN AATRIAL FIBRILLATION

i2 Poster Contributions
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Background: Stasis within the left atrial appendage (LAA) is associated with increased risk of left atrial appendage thrombus (LAAT) and stroke in atrial fibrillation (AF). The thrombogenic propensity of von Willebrand factor (VWF) is directly proportional to multimer size regulated by VWF-cleaving protease (ADAMTS-13).

Methods: To assess the association between LAA blood stasis and VWF-ADAMTS 13, we measured VWF antigen (VWF Ag) by ELISA, VWF activity (VWF Act) by immunoturbidimetry and ADAMTS 13 activity by ACTIFLUOR™ assay in 425 consecutive patients with non-valvular AF (age 63±14 years; 25% women). All AF patients underwent TEE to assess left atrial appendage emptying velocity (LAAEV), spontaneous echo contrast (SEC), and LAAT. Data were compared to 100 patients (age 64±14 years; 39% women) with normal sinus rhythm (NSR).

Results: A direct relationship was noted between VWF (Ag and Act) and intensity of SEC (Figure). No relationship was observed between measures of blood stasis and ADAMTS 13. VWF Ag was one of the strongest determinants of LAAT (c-stat=0.711, p=0.0015) together with LAAEV (c-stat=0.959, p=0004) and heart failure (c-stat=0.715, p<0.0001). CONCLUSSION. A direct correlation exists between VWF and the severity of LAA blood stasis in AF patients. Elevated VWF:Ag may identify AF patients at risk for LAAT.